



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,098	11/26/2003	Dan Avidor	29250-001075/US	6195

7590 10/06/2006  
HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. Box 8910  
Reston, VA 20195

EXAMINER

NGUYEN, DAVID Q

ART UNIT PAPER NUMBER

2617

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/721,098

**Applicant(s)**

AVIDOR ET AL.

**Examiner**

David Q. Nguyen

**Art Unit**

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4,7-13,16-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4,7-13 and 19-22 is/are allowed.
- 6) ☒ Claim(s) 16-18 and 23-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 09/13/06 have been fully considered but they are not persuasive.

In response to applicant's Remarks, applicants argue: “ Tong does not disclose transmitting a pilot signal on the preferred beam, but rather transmits a continuous signal on all beams”.

Examiner disagrees. Tong discloses: “ For example, when data is transmitted to user 3 of user-group area 2, no data is transmitted within user-group areas 1 and 3. Thus, users of group 2 can, during this interval, accurately measure the pilot signal to calculate the current signal to noise ratio. Based upon this calculation, the user terminal may interact with the base station to secure forward link transmission upon the beam having the best quality” (see par. 0049). It is apparent that Tong discloses transmitting a pilot signal to the user population using the preferred beam (beam 2) as claimed in claim 16.

Applicants argue: “the establishment of motivation is null because such "priorities" (as asserted by the Examiner) already exist in Ofugi. As such, a prima facie case of obviousness has not been made”.

Examiner disagrees. Although such “priorities” already exists in Ofugi, Ofugi does not disclose determining a preferred beam for the user so as to maximize the selected user's chances to be scheduled to receive the next packet, the preferred beam used for transmitting a pilot signal for scheduling a user in the user population to receive a next transmission on the preferred beam. Tong et al. discloses determining a preferred beam for the user so as to maximize the selected

Art Unit: 2617

user's chances to be scheduled to receive the next packet, the preferred beam used for transmitting a pilot signal for scheduling a user in the user population to receive a next transmission on the preferred beam (see pars. 50-51). The combination of Tong and Ofuji emphasizes using priorities for packets to be transmitted to users.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 16-18 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ofuji et al (US 20030181163 A1) in view of Tong et al (US 2001/0034236 A1).

Regarding claim 16, Ofuji et al discloses a method of transmitting information to a user, comprising: selecting a user from a user population based on a parameter that is tracked for each user in the user population (see pars. 0075-0079); generating a preferred beam for the selected user (see pars. 0075-0079). Ofuji et al does not mention transmitting a pilot signal to the user population using the preferred beam; scheduling a user based on feedback received in response to the pilot signal; and transmitting information on the preferred beam to the scheduled user. However, Tong et al. discloses transmitting a pilot signal to the user population using the preferred beam (see pars. 0049-0051); scheduling a user based on feedback received in response to the pilot signal (see pars. 0049-0051); and transmitting information on the preferred beam to

Art Unit: 2617

the scheduled user (see pars. 0049-0051). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the above teaching of Frank to Ofuji et al in order to use priorities for packets to be transmitted to users.

Regarding claim 23, Ofuji et al discloses a method of improving system throughput while reducing packet delay for users of a wireless communication system, comprising: selecting a user from a user population based on a parameter that is tracked for each user in the user population (see pars. 0075-0079). Ofuji et al does not mention determining a preferred beam for the user so as to maximize the selected user's chances to be scheduled to receive the next packet, the preferred beam used for transmitting a pilot signal for scheduling a user in the user population to receive a next transmission on the preferred beam. However, Tong et al. discloses determining a preferred beam for the user so as to maximize the selected user's chances to be scheduled to receive the next packet, the preferred beam used for transmitting a pilot signal for scheduling a user in the user population to receive a next transmission on the preferred beam (see pars. 50-51). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the above teaching of Tong et al. to Ofuji et al in order to use priorities for packets to be transmitted to users

Regarding claims 17 and 26, Ofuji et al does not mention wherein the step of scheduling further includes: transmitting a pilot signal to the user population using the preferred beam; receiving feedback from each user of the user population, the feedback including information relates to a maximum supportable data rate for the user; and running a scheduling algorithm to prioritize the user population for receiving a next transmission in a current timeslot. However, Tong et al. discloses transmitting a pilot signal to the user population using the preferred beam;

Art Unit: 2617

receiving feedback from each user of the user population, the feedback including information relates to a maximum supportable data rate for the user; and running a scheduling algorithm to prioritize the user population for receiving a next transmission in a current timeslot (see pars. 0049-0051 and 0066-0068). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the above teaching of Tong et al. to Ofuji et al in order to use priorities for packets to be transmitted to users.

Regarding claim 18, Ofuji et al mentions wherein generating the preferred beam is designed to enhance the selected user's priority to receive the next transmission based on maximum supportable data rate information contained in the selected user's feedback (see pars. 0075-0079).

Regarding claims 24-25, Ofuji et al also discloses wherein the tracked parameter is a waiting time for each user that represents a duration of time since the user has received its last packet, and the selected user is the longest waiting user (see pars. 0064-0067); wherein the tracked parameter is a short term throughput normalized by a long term throughput for each user and calculated as a ratio of the short term throughput to the long term throughput, and the selected user is the user having the lowest ratio (see pars. 0064-0067).

### ***Allowable Subject Matter***

3. Claims 1,4,7-13 and 19-22 are allowed.

The following is an examiner's statement of reasons for allowance:

Art Unit: 2617

Regarding independent claims 1 and 10, the claim has been amended to include the allowable subject matter of claims 3-4. Therefore, claim 1 is now allowable with the same reason set forth in the previous office action.

Claims 4,7-9 depend on claim 1. Therefore, they are allowed.

Claims 11-13 depend on claim 1. Therefore, they are allowed.

Claims 19-22 are allowed as indicated in the previous office action.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2617


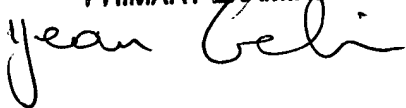
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Q. Nguyen whose telephone number is 571-272-7844.

The examiner can normally be reached on 8:30AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOSEPH H. FEILD can be reached on (571)272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**JEAN GELIN**  
**PRIMARY EXAMINER**



David Q Nguyen  
Examiner  
Art Unit 2617